DOCUMENT RESUME

ED 430 517 IR 019 487

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TITLE A Systematic Approach to Training Faculty To Teach via a Two-Way Interactive Television System.
PUB DATE 1997-04-00
NOTE 8p.; In: Mid-South Instructional Technology Conference Proceedings (2nd, Murfreesboro, TN, April 6-8, 1997); see IR 019 485.
AVAILABLE FROM Web site: http://www.mtsu.edu/~itconf/proceed97/thoms.html
PUB TYPE Guides - Classroom - Teacher (052) -- Reports - Descriptive (141) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS College Faculty; Computer Mediated Communication; Computer Uses in Education; Course Content; Course Organization; Distance Education; Educational Administration; Educational Technology; Ethics; Faculty Development; Higher Education; *Instructional Design; *Instructional Development; *Interactive Television; Legal Responsibility; *Material Development; Teleconferencing; *Telecourses; *Training
IDENTIFIERS *Course Development; Video Teleconferencing

ABSTRACT

This paper addresses a systematic approach to training faculty to teach via two-way interactive television (ITV). The following ten training modules are presented: (1) Introduction to the ITV System, including terminology and ITV history/development; (2) Making ITV Work for You, including syllabus construction, ITV equipment, and technology/assistance available at remote sites; (3) Course Design for ITV, including selecting objectives and identifying how they will be met, observed, and measured; (4) Course Materials Development for ITV, including guidelines for designing and developing instructional materials; (5) Operating the Equipment, including hands-on practice; (6) Sources of Distance Learning Materials, Programs, and Courses, including the ability to downlink programs and courses from elsewhere; (7) Remote Site Origination, including training of the presenter and scheduling; (8) Videoconferencing, including advantages and disadvantages; (9) Computer Interaction with ITV, including tips for material development; and (1) Legal, Administrative, and Ethical Issues Related to ITV, including copyright and the legality of videotaping classes. (DLS)

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A Systematic Approach to Training Faculty to Teach via a Two-Way Interactive Television System

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Abstract

Teaching via ITV is more than merely pushing a few buttons. Teaching effectively using this instructional medium requires a systematic approach to course design; materials design and development; equipment; delivery; remote site originations; computer interaction with ITV; computer-delivered presentations; and legal, administrative, and ethical issues. Extensive training is critical to assure teaching effectiveness. Thoms will discuss a Title III grant-funded set of training modules created to help faculty learn to use this delivery medium.

A Systematic Approach to Teaching via a Two-Way Interactive Television System

Teaching via a two-way interactive television system is more than just pushing a few buttons and talking into a microphone. Using this instructional medium effectively requires a systematic approach to course design, materials design and development, equipment, delivery, remote site originations, computer interaction with ITV, and computer-delivered presentations. It is critical, also, that faculty understand the administrative, legal, and ethical issues related to teaching via ITV.
Today, interactive television (ITV) is bringing many changes to teaching methods and materials design and development. ITV is a very expensive technology and often requires an instructor to redesign a course which has been taught previously in a traditional classroom setting. According to Savage (1995, 90), the instructional methods necessary for teaching on ITV systems are comparable to the regular classrooms, with a few adjustments. This presentation will look at those "few adjustments" which differentiate strategies and equipment used in a traditional classroom and those used in an interactive television classroom. It is the joint responsibility of teachers and administration to assure the instructor is prepared to use the system effectively.

This presentation/paper will address a systematic approach to training faculty to teach via the two-way interactive television system. This training includes course and materials development and design, equipment operation, and other topics listed below:

- Introduction to ITV System
- Making the ITV Work for You
- Course Design for ITV
- Course Materials Development for ITV
- Operating the Equipment
- Sources of Distance Learning Materials, Programs, and Courses
- Remote Site Origination

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- Videoconferencing
- Computer Interaction with ITV

Legal, Administrative, and Ethical Issues Related to ITV

Savage (1995) identifies some recognized advantages of offering courses via ITV include reaching out to small groups of students, breaking down the barriers of time and distance, making education received in small schools comparable to that received in larger schools, offering nontypical courses to groups of students, meeting people's needs for convenience and quality education, breaking down rivalry barriers, giving students the opportunity for non-lecture classroom instruction (i.e. discussion, teamwork, and problem solving activities). Morehouse (1987) points out problems or constraints of ITV: student cheating, lack of personal contact with students, movement and space restrictions, technical difficulties, and conflicting location (school) calendars and schedules.

Savage (1995) indicates that training for faculty must be available, and faculty should avail themselves of the training opportunities by attending the training sessions. This availability of training was the basis for the Title III faculty development grant at St. Cloud State University. The grant provided for ten training modules, as identified above, and presentations to faculty. The topical content for each module is discussed as items which, if applicable to a particular ITV system, might be included in training.

An Introduction to ITV

A basic introduction to the interactive television concept may be necessary, especially if faculty are unfamiliar with this delivery medium. Understanding the terminology or jargon of ITV will provide a basis for faculty using the system. This terminology may include terms such as interactive video, instructional video, distance learning, video conferencing, local access, remote site, graphics camera, instructor camera, SWAP, PIP, and open-audio. In addition to terminology, faculty may want to know more about the history and development of interactive television on the campus and within a network or system.

For the initial training session, show faculty how easy it is to use the system, possibly bringing in one of your system's "shining starts" of ITV delivery. At this first session, it is also a good idea to not only show how easy it is to operate the system, but also explain the different monitors, control board/display panel operation, etc.

Making the ITV Work for You

In this module, the faculty member should learn about syllabus construction, the ITV equipment, and technology and assistance available at remote sites.

Developing an course and constructing a syllabus for an ITV course is much different from one created for a traditional classroom. Organization, planning, teaching strategies, creativity, and instructional technology vary considerably from the regular classroom. For example, make allowances for office hours; since students cannot just "drop in" with questions, the ITV system could be used for one or two hours a week for students to ask questions. In addition to ITV, the students can also connect with the instructor via e-mail or telephone.

The course syllabus should contain all the "vital statistics" of the course: relevant telephone numbers (including fax and trouble numbers), guidelines and rules for the course, assignments with in-depth written instructions, and materials to be graded (including criteria and grading schedule). If these materials are made available the first class session, then throughout-the-term mailings will be reduced. If at all possible, have all students enrolled in the class attend the first class session at the hosting site. People will be able to meet others in the class, adding to the interpersonal relationship component of the course. Students will feel a part of the class, even if they will be located at one of the remote sites.

When teachers plan a course, they need to vary the teaching strategies used; lectures should be limited to

15 minutes, and then another strategy should be used, perhaps question-and-answer or small group discussion. Faculty should incorporate the use of visuals in their ITV course, supporting the second channel of instruction concept. More on visuals will be discussed in another module.

Course Design

Course design is critical to the success of an ITV course. Although course content may be the same as that in a traditional academic classroom, certain considerations must be taken when preparing to teach a distance education course. The following guidelines can be used in training faculty to design courses to accommodate the ITV medium.

First, it is important to select the behavioral objective(s) that will be addressed. Then identify how each objective will be addressed. Select the objectives first, then identify how they will be met, observed, and measured.

Include participants at off-premise sites in all discussions, and be certain to include a sequence of activities which include active participation. The course may be designed to have students use the ITV system as a means for brainstorming with small groups and also as the delivery medium for groups located at a single site.

Course Materials Development

Course materials preparation is vary important for successful ITV teaching. Although the course content may be the same as that in a traditional classroom, certain design guidelines must be foll- wed in order to prepare materials which can be used effectively with the ITV network.

The following guidelines should be incorporated when designing and developing instructional materials:

1. Use color rather than black-and-white visuals whenever possible.

2. Use photographs rather than simple drawings if they will make the content more understandable.

3. Use realism in form and color.

4. Use the "simple over complex" approach for younger learners, the "complex over simple" approach for adult learners.

5. Incorporate the elements of design.

6. Use easy-to-read color combinations for transparencies (black on yellow; green, red, or blue on clear acetate; white on blue, or black on clear). Yellow on black, yellow on red, yellow on green are more difficult to read.

7. Use balance on visuals rather than information all being on left side of visual.

8. Use plain letters (sans serif) rather than decorative. Plain letters would include Geneva or Helvetica style, while serif letter style would include Palatino, New Century Schoolbook. The decorative style would include Old English, Onyx, Machine, etc., and should be avoided because they are more difficult to read.

9. Use the same (or perhaps only 2) letter styles through the visual series.

10. Use upper and lower case lettering rather than all-capital words; titles can be capitalized, but the rest of the visual should be upper- and lower-case.

11. For transparencies, the recommended font size is 24 or 36; for computer-delivered

presentation, font size 36 is the minimum.

12. Allow plenty of "white space" on all visuals to keep it uncluttered.

13. Use a horizontal format for transparencies and computer-delivered presentations.

14. Avoid hand-written transparencies and masters whenever possible.

15. Use key words and phrases rather than whole sentences in most situations.

16. Use italics, bold, underlining, or color emphasis, but don't overdo it.

17. Use headings and side headings for organization.

18. Put a single concept on a "screen" or frame.

19. Break down complex visuals into simpler ones to build them up step by step.
20. Use consistent background colors in a series of visuals (for continuity).

Operating the Equipment

Use skills and knowledge from previous training sessions to avoid problems and pitfalls associated with ITV. Have faculty practice, practice, practice using the

ITV equipment and materials which they develop. Let them compare how their materials from traditional classrooms transmit across the ITV lines (split the group and put in two ITV classrooms, if possible).

Show the faculty member how to operate the equipment, including the auxiliary technology. Let them experiment with SWAP, PIP, and switching back and forth between options. This is the point in training to "loosen up" and experiment; giggling is allowed! Training on the ITV equipment is critical, and often the students learn from mistakes; they then appreciate the guidelines listed above and how complying will help with their teaching effectiveness.

Sources of Distance Learning Materials, Programs, and Courses

Most schools may still be limited to in-house course delivery. However, other institutions have moved beyond that point and are able to downlink programs and courses from elsewhere (other institutions, the PBS Adult Learning Satellite Service, etc.). If your institution is considering these options, you may wish to contact the individual provider for rules, guidelines, and procedures to participate.

Remote Site Originations

Most educational courses offered via ITV are of the "home grown" variety: faculty design, develop, and deliver the academic course. The educational institution is usually the hosting location, while schools within the area are the receiving sites. It doesn't have to be that way, however.

Remote site origination can be used for an instructor who is teaching only students at another site, with no students with the presenter. Or, as some faculty have done, remote site origination can be a site where a guest presenter from somewhere in the region can present to the class. Training of the presenter at a remote site, especially if it is a one-shot deal, is frequently overlooked and downplayed. If possible, have the presenter meet with a technician or experienced ITV instructor at the remote site; if that is not possible, telephone and ITV training by the course instructor with the guest presenter can be effective.

Remote site origination is not that much different than on-site origination. The presenter must keep in mind, however, that student feedback (nonverbal, especially) is missing at the remote site. In addition,

the "wait time" or "lag time" between questions and answers can be 5-15 seconds (but seems to be 5-15 minutes). A presenter at a remote site also must remember to talk to the camera, but to the monitor. The presenter can pretend that the camera is an actual person rather than an inanimate object. By speaking to and looking at the camera, the presenter gives the impression of speaking directly to the audience back at the hosting site.

One more tip to keep in mind. Because students at the remote site tend to feel isolated or at least away from the rest of the class, it is advantageous for a faculty member to visit the off-premise or non-hosting site once or twice during the term; this gives the on-campus students a sample of what the off-premises students experience, and these visits also bring a closer relationship between the instructor and the off-premises students.

The last topic relating to a remote site origination (as well as regular use of an off-premise location) deals with scheduling. A proactive rather than reactive plan is recommended. Not all locations maintain the same calendar of school days, especially when university classes are transmitted to community colleges or high schools; all too often the hosting site is ready to transmit and students at the off-premise location are standing ou side a locked door with no school employee nearby to let them in. Contingency plans are a must; make sure the students have a "trouble number" to call in the event this happens; this telephone number might connect to the main office, the administrator, or some other designated person..

Videoconferencing

Videoconferencing is a business-related use for the interactive television system. It is being used on a more frequent basis than was anticipated just a few years ago. Although not a panacea for problems, teleconferencing has proven beneficial in some business and education situations. There are a number of advantages as well as disadvantages.

Advantages of videoconferencing include: reduction or elimination of travel costs, reduction in time away from the workplace, increase in the number of people who can participate in a conference, reduction in the cost of registration at meetings, increase in collaborative or cooperative projects, greater participation between and among distant staff members, and extension of boundaries to include international participation.

Although the above list identifies some very positive aspects of videoconferencing, there are some problems, pitfalls, and disadvantages which must be addressed. The startup costs are substantial, especially if state-of-the-art equipment is used. Startup costs must include not only equipment, but also room preparation, training of users, and remuneration for users. It is better to designate a permanent space for the ITV facility rather than use a portable system. Another problem with using ITV for videoconferencing is that it does, indeed, hinder person-to-person interaction, and some people become the "invisible group" and may be forgotten. Equipment failures occur Q someone once said that Murphy's Law goes into overdrive every time the ITV system is used. There are other pitfalls associated with using the ITV for videoconferencing purposes, but the ones listed above are the major ones.

Computer Interaction with ITV

In a previous module, interaction of peripheral equipment (cameras, fax, etc.) was addressed. What can the computer do for ITV? The answer is LOTS! Whether the computer system is Macintosh or PC based, the transmission can be quite good. However, a little common sense needs to be applied. The print must be large, the background and text colors must be very different, and a basic rule applies Q those in the back of the largest room being used must be able to see (and read) the material on the monitor.

Quite a few "tricks of the trade" were provided in the module addressing course materials development. Just a few additional tips: use a 3-4 proportion, horizontal format, "bleed area" as a border on edges, plenty of white space, one concept per screen, overlays and transitions as needed, examples and non-examples, the KISS (keep it short and simple) approach, visual cues (arrows, numbers, bullets, motion or direction indicators, etc. Keep in mind the suggestions regarding lettering (font style) and size.

Divide long lists into groups of 5-7 items per list.

The computer interaction is making teaching via ITV much easier than before. The computer-delivered presentation can be planned and prepared in our office or on our home computer and then brought to class on a disk; that sure beats bulging brief cases, file folders, etc.

Legal, Administrative, and Ethical Issues

The last module that is presented to faculty who will be teaching via ITV is one which deals with issues which tend to blend together: legal, administrative, and ethical issues. Some issues are very much one type, while others are part of what we call the "muddy water" issues. Only a few will be discussed here.

Legal issues may parallel a contract, which may identify reassigned time for course preparation, materials development, and/or general restructuring of the course. Included in the contract may be specific contract requirements for remuneration for teaching an ITV class. Another legal issue has to do with the distance education philosophy that all connected sites for a course constitute a single classroom, supporting the "classroom without walls" concept. What's acceptable and legal in a regular classroom is usually, but not always, permissible in an ITV class. Two issues come to mind: fair use provisions of copyrighted material and videotaping of students.

The use of copyrighted material transmitted via ITV is still questionable, as is a great number of issues about copyright. Cyrs and Smith (1990) give the following paraphrased advice about materials for telecourses:

1. To be safe, obtain written permission from the copyright holder (usually the publisher, not the author), for all copyrights materials used in telecourses.
2. Fair Use guidelines relating to television are still not clearly delineated. Courts have looked at fair use cases on an individual basis.
3. Many telecourses are made with the intent to sell and distribute multiple copies, which put those producers in great jeopardy of falling outside the interpretations.
4. Be careful, be cautious. Most copyright holders will give permission without cost or charge a fee. If a fee is charged, pay it and pass on the cost to customers. Word of wisdom: keep very good records of the communications.

The second question has to do with the legality of videotaping classes. If an instructor wants to videotape a course, the students need to be aware of this at the start of the first session. The instructor should identify the parameters of use of the tape: makeup, review, etc. It is not imperative, but it is strongly advised, to have students sign an agreement that the tapes may be made; in the event a student objects and the instructor still wants to make the videotape, the student may be moved to a location that is outside the scope of the cameras. If an instructor takes a videotape to a conference as part of a presentation, permission should be secured from each student appearing on the videotape. It does get confusing!

Administrative issues might include selecting courses to be offered via ITV, identifying faculty to teach via the ITV system, scheduling ITV courses, identifying to which locations the course is transmitted, videotaping of the classes, and rebroadcasting the videotapes. Administrators frequently base the course selection to need/demand, whereas selection of faculty may be viewed as "plum or prune" treatment.

Some of these issues segue right into some ethical concerns, which some institutions have chosen to address, while others are waiting to be reactive when a problem arises. Some of the ethical issues include rebroadcast of the course without the faculty member's permission or knowledge, size of the class, people who have access to the videotapes, library access to off-premise students, comparable assignments for both groups, availability of the best teachers to teach over the system, ownership of the course (institution vs. faculty member), displacement of teachers, marketing of program or course, admission criteria for students, and student access to instructors.

The above administrative, legal, and ethical issues can be real eye-openers to teachers who will use the

ITV system. Many of these issues are not relevant to a regular classroom course; others are. These issues cannot be aside and ignored. There is an obligation to at least make faculty aware them.

Conclusion

Teaching via the interactive television system (ITV) can be a real boon to education. To help alleviate some of the constraints and problems associated with interactive television, a thorough understanding of the design, development, and delivery of a course via ITV is critical. Whether this training is provided by an ITV coordinator, a faculty development officer, or an experienced ITV instructor, the necessity is still there for this training. To be effective in the ITV classroom, the instructor needs training in (or least an understanding of) the ten modules described above.

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